

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Grantland G. Drutchas on June 8, 2010.

The application has been amended as follows:

Canceled claims 10-17.

Inserted new claim 18 as follows:

--18 (New) A parallel kinematic positioning machine having a frame and having an arm that is slidably mounted within a ring which is pivotably and rotatably mounted within the frame such that the arm can slide axially within the ring and swing in all directions relative to the frame, the positioning machine further comprising:

a machine-connected positioning head mounted on an end of said arm;
at least three machine-setting devices each mounted to the frame by a universal joint such that each of said machine-setting devices can swing in all directions relative to the frame, the universal joints being spaced around the frame circumferentially about said ring, each machine-setting device comprising a piston displaceable axially in a cylinder connected to the frame by a respective

one of the universal joints, and each piston having an end pivotably connected by an arm joint to the positioning head;

each arm joint comprising a wobbler comprising a supporting shaft having axially aligned ends defining a main axis and a centrally disposed offset cylindrical portion defining an external bearing mounting surface, said offset cylindrical portion having an axis having a constant angular offset from and intersecting with the main axis and defining a wobbler axis, said supporting shafts of the arm joints being mounted to the positioning head at positions tangential to a circumference of the positioning head concentrically around said end of said arm;

said end of each piston being rotatably mounted to the external bearing mounting surface defined by the offset cylindrical portion of a respective one of said wobblers;

wherein displacing the pistons in the respective cylinders rotates the offset cylindrical portion of each wobbler around the respective wobbler axis, tilting and displacing each supporting shaft relative to the respective one of said pistons, bringing the machine-connected positioning head to a different position in space relative to the frame. --.

Inserted new claim 19 as follows:

--19. (New) A positioning machine according to claim 18, wherein the supporting shaft of each respective arm joint is rotatably mounted to the positioning head. --.

Inserted new claim 20 as follows:

--20. (New) A positioning machine according to claim 19, wherein the supporting shaft of each respective arm joint is rotatably mounted to the positioning head by means of two bearing housings positioned on respective sides of the arm joint adapted to receive, respectively, a first said end and a second said end of the supporting shaft. --.

Inserted new claim 21 as follows:

--21. (New) A positioning machine according to claim 18, wherein the supporting shaft of each respective arm joint is non-rotatably mounted to the positioning head and the offset cylindrical portion of the arm joint is rotatably mounted to the supporting shaft. --.

Inserted new claim 22 as follows:

--22. (New) A positioning machine according to claim 21, wherein one of said ends of each respective supporting shaft is axially secured in a first joint mounting means on the positioning head by a clamp coupling; and wherein the other said end of the supporting shaft is firmly connected to a second joint mounting means on the positioning head. --.

Inserted new claim 23 as follows:

--23. (New) A positioning machine according to claim 18, wherein, for each arm joint, the wobbler axis and the main axis of the respective supporting shaft mutually intersect at a constant angle α , wherein $1^\circ \leq \alpha \leq 45^\circ$. --.

Inserted new claim 24 as follows:

--24. (New) A positioning machine according to claim 18, wherein, for each arm joint, the wobbler axis and the main axis of the respective supporting shaft mutually intersect at a constant angle α , wherein $5^\circ \leq \alpha \leq 20^\circ$. --.

Inserted new claim 25 as follows:

--25. (New) A positioning machine according to claim 18, wherein each of the pistons intersect with the supporting shaft of each respective arm joint at an angle α , so as to permit tilting between the pistons and the respective supporting shafts mounted to the positioning head. --.

2. The following is an examiner's statement of reasons for allowance:

As to claim 18, Schaeffler Waelzlager (DE 199 04 702) in view of Akeel (US 5,987,726) discloses the claimed positioning machine with the exception of each arm joint comprising a wobbler comprising a supporting shaft having a centrally disposed offset cylindrical portion defining an external bearing mounting surface, the offset cylindrical portion having an axis having a constant angular offset from and intersecting with the main axis and defining a wobbler axis; the end of each piston being rotatably mounted to the external bearing mounting surface defined by the offset cylindrical portion of a respective one of the wobblers; wherein displacing the pistons in the respective cylinders rotates the offset cylindrical portion of each wobbler around the respective wobbler axis, tilting and displacing each supporting shaft relative to the respective one of the pistons, bringing the machine-connected positioning head to a different position in space relative to the frame.

There is no teaching or suggestion, absent the applicant's own disclosure, for one having ordinary skill in the art at the time the invention was made to modify the positioning machine disclosed by Schaeffler Waelzlager in view of Akeel to have the above mentioned elemental features. Furthermore, such modifications would yield unexpected and unpredictable results.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL P. FERGUSON whose telephone number is (571)272-7081. The examiner can normally be reached on M-F (6:30am-3:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571)272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPF
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/Michael P. Ferguson/
Primary Examiner, Art Unit 3679